

No. 269995

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Switzerland  
Swiss Office for Intellectual Property  
PATENT

Published November 1, 1950

Class 2 e

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Application filed: December 3, 1948 at 3:15 P.M. - Patent registered:  
August 15, 1950

## MAIN PATENT

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Clamp for the Detachable Fastening of Plants to Holding Sticks

The invention has as subject matter a clamp [clip] for the detachable fastening of plants to holding sticks that is distinguished in that it consists of a metal band that forms two clamping shanks resiliently connected to one another on one end by a connecting piece and are bent outward on the other end by at least approximately 180° and that each carry a grip which grips project to the rear past the connecting piece and can be used to activate the clamp, the purpose of which clamp is that the clamp shanks can be spread open by pressing the grips against one another and that the plant stalk can be introduced between the clamp shanks and then the holding stick can be clamped in between the outer ends of the clamp shanks.

The drawings show a exemplary embodiment of the invention.

Figure 1 shows a clamp in a lateral view.

Figure 2 shows two clamps in use.

Clamp 1 consists of a single piece of resilient metallic band consisting, e.g., of spring steel. It comprises connecting piece 2 followed by the two clamping shanks 3, 4. The clamping shanks are bent outward by approximately  $180^\circ$  at closing ends 5, 6 and carry grips 7, 8 projecting past connecting piece 2 with their free ends 9, 10 that can be used to activate the clamp. Grips 7, 8 closely contact clamping shanks 3, 4, as the drawings show. However, they could also run straight back so that they would only touch the arcs of clamping shanks 3, 4 and of connecting piece 2 as tangents.

If grips 7, 8 are pressed against one another, clamping shanks 3, 4 are spread apart, after which plant stalk 11 can be introduced between clamping shanks 3, 4 and then holding stick 12 can be clamped in between outer ends 9, 10 of clamping shanks 3, 4 [sic - figure 2 seems to show stick 12 clamped in elsewhere].

The described clamp is very simple to manufacture, can be readily positioned and removed and can be used for years without losing its reliable action.

## CLAIM

A clamp for the detachable fastening of plants to holding sticks, characterized in that it consists of a metal band that forms two clamping shanks resiliently connected to one another on one end by a connecting piece and are bent outward on the other end by at least approximately 180° and that each carry a grip which grips project to the rear past the connecting piece and can be used to activate the clamp, the purpose of which clamp is that the clamp shanks can be spread open by pressing the grips against one another and that the plant stalk can be introduced between the clamp shanks and then the holding stick can be clamped in between the outer ends of the clamp shanks.

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FRENCH REPUBLIC  
NATIONAL INSTITUTE  
OF INDUSTRIAL PROPERTY

PARIS

Publication No.: 2 278 006  
(only to be used for ordering  
copies)

**PATENT APPLICATION**

**No. 74 24935**

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One-Piece Pincers with a Functional Shape and Locking Notch

IPC<sup>2</sup>: F 16 B 2/22

Filing date..... July 9, 1974 at 5 P.M.

Priority claimed:

Date application made available to the  
public..... B.O.P.I. - "Listes" No. 6 dated 2/6/1976

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Applicant: Camillo Moulet, residing in France

Invention of:

Holder: Societe Bio Engineering Research, residing in the Grand Duchy of  
Luxembourg

Representative: Jean-Paul Clement

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The invention relates to one-piece pincers [pliers, forceps] with a functional shape and locking notch [serrated fit].

It is intended to be used for laundry and in medicine or photography with no limitation on its use.

In the known devices pincers are generally formed by assembling strips [bands] by means of a metal spring and do not allow the grip to be locked after the objects to be immobilized have been grasped.

The device of the invention eliminates these disadvantages and allows the use, starting from a one-piece element, of the elasticity even of the manufacturing material and the locking of the grip after the object has been grasped.

Moreover, these pincers without a profile inaccessible to cleaning can be readily rendered aseptic, which allows their use in medicine.

These pincers are constituted by an injected piece with a profile forming pincers and spring at the same time and comprising a locking latch maintaining the jaws of the branches in the gripping position.

The attached drawings show one of the embodiments of the subject matter of the invention in a non-limiting manner by way of example.

Figures 1 and 2 show the one-piece pincers with a locking element in elevation and in transversal section.

Figures 3, 4, 5 and 6 show variants of the realization of the same object.

Figure 7 shows pincers without locking in elevation.

The pincers in figures 1, 2 are constituted by a one-piece element at its rear part 1 forming an elastic articulation branch, whose two strands [sides, ends] 2, 3 form the branches with grips 4, 5. The front end forms gripping jaws 8, 9 by counterbends 6, 7. Lower jaw 9 has perpendicular extension 10 forming an abutment or stop limiting the penetration of the object to be grasped.

The lower face of the branches is integral with vertical spur 11 with a profiled head that locks on notched stop 12.

According to figures 3, 4 branches 13, 14 are rectilinear with manipulating grips 15, 16 located at the front part and jaws 17, 18 formed on the front lower face with a classic shape.

Branches 13, 14 are connected by a U-shaped elastic sector formed by two sectors 19, 20 connected by notched element 21 in which hooks 22, 23 positioned at the inside rear part of the jaws lock.

The pincers in figures 5, 6 are formed by rectilinear branches 24, 25 with manipulating grips 26, 27 and jaws 28, 29 connected by the elastic sector forming loop 30; at the same time this sector constitutes a stop limiting the penetration of the object to be retained.

A locking latch is formed by key [pin, dog] 31 retained by flexible pawl 32 that holds it in a parallel position but permits its vertical locking

positioning 33 by the penetration of its ends into a housing provided for their reception.

The pincers in figure 7 are formed by two counterbent branches 34, 35 connected at their ends by vertical butt 36 with opposed gripping jaws 37, 38 in which the elastic sector is formed by the combination of crossed strands 39, 40 that invert the branches and flex under the thrust exerted on manipulating grips 41, 42.

These one-piece pincers adapt to all domestic, industrial, medical and various applications.

They also are simpler to manufacture by injection, resulting in a reduction of the manufacturing cost and ease of manipulation united with a safe usage that renders them suitable for all usages.

Nevertheless, the shapes, dimensions and arrangements of the various elements can vary within the boundary of equivalents, as can, moreover, the materials used for their manufacture without this altering the general concept of the invention just described.

## CLAIMS:

1. A one-piece pincers device with a functional shape and a locking notch that at the same time allows a simplification of manufacture, safe usage that renders them suitable for household, industrial and medical applications, characterized by the forming of branches connected by a loop forming an elastic sector, with the forming of retention jaws comprising a stop for limiting the penetration of the piece to be retained and comprising an integrated locking element that immobilizes the jaws in the gripping position.

2. The device according to Claim 1, characterized by the fact that the locking element is constituted by a vertical spur positioned inside the curved, elastic branches with its head engaging into a retention notch that can be unlocked by thrust.

3. The device according to Claim 1, characterized by the fact that according to an embodiment the U-shaped elastic sector placed between the rectilinear branches comprises a notched element that receives the hooks placed on the inside face of the branches.

4. The device according to Claim 1, characterized by the fact that the locking element is constituted by a key retained horizontally by a flexible pawl connected to a branch and that positions itself vertically into housings formed on interfaces of the branches in order to keep the jaws in their gripping position.

5. The device according to Claim 1, characterized by the fact that the injected one-piece pincers are constituted by two counterbent branches connected by a vertical butt with opposed gripping jaws whose elastic sector is formed by the combination of the vertical butt and the oblique inverted profiles of the branches.